



Complete Summary

GUIDELINE TITLE

Comprehensive assessment and management of the critically ill. In: Evidence-based geriatric nursing protocols for best practice.

BIBLIOGRAPHIC SOURCE(S)

Balas MC, Casey CM, Happ MB. Comprehensive assessment and management of the critically ill. In: Capezuti E, Zwicker D, Mezey M, Fulmer T, editor(s). Evidence-based geriatric nursing protocols for best practice. 3rd ed. New York (NY): Springer Publishing Company; 2008 Jan. p. 565-93. [76 references]

GUIDELINE STATUS

This is the current release of the guideline.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- [February 28, 2008, Heparin Sodium Injection](#): The U.S. Food and Drug Administration (FDA) informed the public that Baxter Healthcare Corporation has voluntarily recalled all of their multi-dose and single-use vials of heparin sodium for injection and their heparin lock flush solutions. Alternate heparin manufacturers are expected to be able to increase heparin products sufficiently to supply the U.S. market. There have been reports of serious adverse events including allergic or hypersensitivity-type reactions, with symptoms of oral swelling, nausea, vomiting, sweating, shortness of breath, and cases of severe hypotension.

COMPLETE SUMMARY CONTENT

** REGULATORY ALERT **

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

IMPLEMENTATION OF THE GUIDELINE

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

SCOPE

DISEASE/CONDITION(S)

Serious or life-threatening illness requiring admission to a critical-care unit

GUIDELINE CATEGORY

Evaluation
Management

CLINICAL SPECIALTY

Critical Care
Geriatrics
Nursing

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Nurses
Physician Assistants
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To restore physiologic stability, prevent complications, maintain comfort and safety, and preserve pre-illness functional ability and quality of life in older adults admitted to critical-care units

TARGET POPULATION

Critically ill older adult

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment

1. Preadmission period
 - Health status, cognitive and functional ability, and social support systems
2. During intensive care unit (ICU) stay
 - Comorbidities/common ICU diagnoses
 - Acute pathology

- ICU/environmental factors
- Atypical presentation

Management

1. During preadmission period
2. During ICU stay interventions that may benefit:
 - Multiple organ systems
 - Respiratory system
 - Cardiovascular system
 - Neurologic/pain
 - Gastrointestinal system
 - Genitourinary system
 - Immune/hematopoietic system
 - Skin

MAJOR OUTCOMES CONSIDERED

- Hemodynamic stability
- Complications
- Functional status
- Pain
- Quality of life
- Intensive care unit utilization rate
- Mortality rate

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
 Hand-searches of Published Literature (Secondary Sources)
 Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Although the AGREE instrument (which is described in Chapter 1 of the original guideline document) was created to critically appraise clinical practice guidelines, the process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus the AGREE instrument has been expanded for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A

literature search was conducted to find the best available evidence for each clinical question addressed. The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice protocol being developed.

In addition to rating each literature citation to its level of evidence, each citation was given a general classification, coded as "Risks," "Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Case report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/Consensus panels

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METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Levels of evidence (I – VI) are defined at the end of the "Major Recommendations" field.

Parameters of Assessment

- Preadmission: Comprehensive assessment of a critically ill older adult's preadmission health status, cognitive and functional ability, and social support systems helps identify risk factors for cascade iatrogenesis, the development of life-threatening conditions, and frequently encountered geriatric syndromes. Factors that nurses need to consider when performing the admission assessment include the following:
 - Pre-existing cognitive impairment: Many older adults admitted to intensive care units (ICUs) suffer from high rates of unrecognized, pre-existing cognitive impairment (Pisani et al. "Screening," 2003 [**Level IV**]; Pisani et al. "Under-recognition," 2003 [**Level IV**]).
 - Knowledge of preadmission cognitive ability could aid practitioners in:
 - Assessing decision making capacity, informed consent issues, and evaluation of mental status changes throughout hospitalization (Pisani et al. "Screening," 2003 [**Level IV**]).
 - Making anesthetic and analgesic choices
 - Considering one-to-one care options
 - Weaning from mechanical ventilation
 - Assessing fall risk
 - Planning for discharge from the ICU
 - Upon admission of an older adult to the ICU, nurses should ask relatives or other caregivers for baseline information about the older adult's:
 - Memory, executive function (e.g., fine motor coordination, planning, organization of information), and overall cognitive ability (Kane, Ouslander, & Abrass, 2004 [**Level VI**]).
 - Behavior on a typical day, how the patient interacts with others, their responsiveness to stimuli, how able they are to communicate (reading level, writing, and speech), and their memory, orientation, and perceptual patterns prior to their illness (Milisen et al., 2001 [**Level VI**]).
 - Medication history to assess for potential withdrawal syndromes (Broyles et al., 2005 [**Level IV**])
 - Developmental and psychosocial factors: Critical illness can render older adults unable to effectively communicate with the health care team, often related to physiologic instability, technology that leaves them voiceless, and sedative and narcotic use. Family members are therefore often a crucial

source for obtaining important preadmission information. Upon ICU admission, nurses need to determine:

- What is the elder's past medical, surgical, and psychiatric history? What medications was the older adult taking before coming to the ICU? Does the elder regularly use illicit drugs, tobacco, or alcohol? Do they have a history of falls, physical abuse, or confusion?
- What is the older adult's marital status? Who is the patient's significant other? Will this person be the one responsible to make decisions for the elder if they are unable to do so? Does the elder have an advanced directive for health care? Is the elder a primary caregiver to an aging spouse, child, grandchild, or other person?
- How would the elder describe his/her ethnicity? Do they practice a particular religion or have spiritual needs that should be addressed? What was their quality of life like before becoming ill?
- Preadmission functional ability/nutritional status: Limited preadmission functional ability and poor nutritional status are associated with many negative outcomes for critically ill older adults (Mick & Ackerman, 2004 **[Level VI]**; Roche et al., 1999 **[Level IV]**; Rosenthal & Kavic, 2004 **[Level VI]**; Tullmann & Dracup, 2000 **[Level VI]**). Therefore, nurses should assess the following:
 - Did the elder suffer any limitations in the ability to perform their activities of daily live (ADLs) preadmission? If so, what were these limitations?
 - Does the elder use any assistive devices to perform their ADLs? If so, what type?
 - Where did the patient live prior to admission? Did they live alone or with others? What was the elder's physical environment like (e.g., house, apartment, stairs, multiple levels)?
 - What was the older adult's nutritional status like preadmission? Do they have enough money to buy food? Do they need assistance with making meals/obtaining food? Do they have any particular food restrictions/preferences? Were they using supplements/vitamins on a regular basis? Do they have any signs of malnutrition, including recent weight loss/gain, muscle wasting, hair loss, skin breakdown?
- During ICU stay: There are many anatomic/physiologic changes that occur with aging (see Table 25.1 in original guideline document). The interaction of these changes with the acute pathology of a critical illness, co-morbidities, and the ICU environment leads not only to atypical presentation of some of the most commonly encountered ICU diagnoses but may also elevate the older adult's risk for complications. The older adult must be systematically assessed for the following:
 - Co-morbidities/common ICU diagnoses
 - Respiratory: chronic obstructive pulmonary disease, pneumonia, acute respiratory failure, adult respiratory distress syndrome, rib fractures/flail chest

- Cardiovascular: acute myocardial infarction, coronary artery disease, peripheral vascular disease, hypertension, coronary artery bypass grafting, valve replacements, abdominal aortic aneurysm, dysrhythmias
- Neurologic: cerebral vascular accident, dementia, aneurysms, Alzheimer's disease, Parkinson's disease, closed head injury, transient ischemic attacks
- Gastrointestinal: biliary tract disease, peptic ulcer disease, gastrointestinal cancers, liver failure, inflammatory bowel disease, pancreatitis, diarrhea, constipation, and aspiration
- Genitourinary: renal cell cancer, chronic renal failure, acute renal failure, urosepsis, and incontinence
- Immune/Hematopoietic: sepsis, anemia, neutropenia, and thrombocytopenia
- Skin: necrotizing fasciitis, pressure ulcers
- Acute pathology: Thoracic or abdominal surgery, hypovolemia, hypervolemia, hypo/hyperthermia, electrolyte abnormalities, hypoxia, arrhythmias, infection, hypo/hypertension, delirium, ischemia, bowel obstruction, ileus, blood loss, sepsis, disrupted skin integrity, multisystem organ failure.
- ICU/Environmental factors: deconditioning, poor oral hygiene, sleep deprivation, pain, immobility, nutritional status, mechanical ventilation, hemodynamic monitoring devices, polypharmacy, high-risk medications (e.g., narcotics, sedatives, hypnotics, nephrotoxins, vasopressors), lack of assistive devices (e.g., glasses, hearing aids, dentures), noise, tubes that bypass the oropharyngeal airway, poorly regulated glucose control, Foley catheter use, stress, invasive procedures, shear/friction, intravenous catheters.
- Atypical presentation: Commonly seen in older adults experiencing the following: myocardial infarction, acute abdomen, infection, and hypoxia.

Nursing Care Strategies

- Preadmission: Based on their preadmission assessment findings, nurses should consider:
 - Obtaining appropriate consults (i.e., nutrition, physical/occupational/speech therapist).
 - Implementing safety precautions.
 - Using pressure-relieving devices.
 - Organizing family meetings.
 - Providing older adults with a consistent primary nurse.
- During ICU: Nursing interventions that may benefit:
 - Multiple organ systems:
 - Encouraging early, frequent mobilization/ambulation.
 - Providing proper oral hygiene.
 - Ensuring adequate pain control.
 - Reviewing/assessing medication appropriateness.
 - Avoiding polypharmacy/high-risk medications (see Table 25.2 in the original guideline document).
 - Securing and ensuring the proper functioning of tubes/catheters.

- Actively taking measures to maintain normothermia.
 - Closely monitoring fluid volume status.
- Respiratory
 - Encourage and assist with coughing, deep breathing, incentive spirometer use; use alternative device when appropriate (e.g., positive expiratory pressure [PEP]).
 - Assess for signs of swallowing dysfunction and aspiration.
 - Closely monitor pulse oximetry and arterial blood gas results.
 - Consider the use of specialty beds.
 - Advocate for early weaning trials and extubation as soon as possible.
 - Exercise standard ventilator-associated pneumonia (VAP) precautions (Kunis & Puntillo, 2003 [**Level VI**]):
 - Keep the head of the bed elevated to more than 30 degrees.
 - Provide frequent oral care.
 - Maintain adequate cuff pressures.
 - Assess the need for stress ulcer prophylaxis.
 - Turn the patient as tolerated.
 - Maintain general hygiene practices.
- Cardiovascular
 - Carefully monitor the older adult's hemodynamic and electrolyte status.
 - Closely monitor the older adult's electrocardiogram (EKG) with an awareness of many conduction abnormalities seen in aging. Consult with physician regarding prophylaxis when appropriate.
 - Advocate for the removal of invasive devices as soon as the patient's condition warrants. The least restrictive device may include long-term access.
 - Recognize that both pre-existing pulmonary disease and manipulations of the abdominal and thoracic cavities may lead to unreliability of traditional values associated with central venous and pulmonary artery occlusion pressures (Rosenthal & Kavic, 2004 [**Level VI**]).
 - Because of age-related changes to the cardiovascular (CV) system, the nurse should acknowledge (Rosenthal & Kavic, 2004 [**Level VI**]):
 - Older adults often require higher filling pressures (i.e., central venous pressures [CVPs] in the 8 to 10 range, pulmonary artery occlusion pressures [PAOPs] in the 14 to 18 range) to maintain adequate stroke volume and may be especially sensitive to hypovolemia.
 - Over-hydration of the older adult should also be avoided because it can lead to systolic failure, poor organ perfusion, and hypoxemia with subsequent diastolic dysfunction.
 - Certain drugs commonly used in the ICU setting may prove to be either not as effective (e.g., isoproterenol and dobutamine) or more effective (e.g., afterload reducers).
- Neurologic/Pain
 - Closely monitor the older adult's neurologic/mental status.
 - Screen for delirium and sedation level at least once per shift.

- Implement interventions to reduce delirium (Inouye et al., 1999 [**Level II**]; Jacobi et al., 2002 [**Level V**]; Milbrandt et al., 2005 [**Level IV**]; Tullmann & Dracup, 2000 [**Level VI**]; Yeh et al., 2004 [**Level III**]; Zeleznik, 2001 [**Level VI**]):
 - Promote sleep, mobilize as early as possible, review medications that can lead to delirium, treat dehydration, reduce noise or provide "white noise," close doors/drapes to allow privacy, provide comfortable room temperature, encourage family and friends to visit, allow the older adult to assume the preferred sleeping positions, discontinue any unnecessary lines or tubes, and avoid the use of physical restraints using least restraint for minimum time only when absolutely necessary.
 - Maximize older adults' ability to communicate their needs effectively and interpret their environment.
 - Promote the older adult wearing glasses, hearing aids, and other appropriate assistive devices.
 - Face patients when speaking to them, get their attention before talking, speak clearly and loud enough for them to understand, allow them enough time (pause time) to respond to questions, provide them with a consistent provider (i.e., a primary nurse), use visual clues to remind them of the date and time, and provide written or visual input for a message (Garrett & Beukelman, 1995 [**Level III**]; Lasker et al., 1997 [**Level III**]).
 - Provide older adults with alternate means of communication (e.g., providing a pen/paper; using nonverbal gestures; and/or using specially designed boards with alphabet letters, words, or pictures) (Connolly, 1995 [**Level IV**]; Patak et al, 2004 [**Level IV**]; Stovsky, Rudy, & Dragonette, 1988 [**Level III**]).
 - Provide translators/interpreters as needed.
 - Provide adequate pain control while avoiding over- or under-sedation. For a full discussion, see the NGC summary of the Hartford Institute for Geriatric Nursing guideline [Pain Management](#).
- Gastrointestinal (GI)
 - Monitor for signs of GI bleeding and delayed gastric emptying/motility.
 - Encourage adequate hydration, assess for signs of fecal impaction, and implement a bowel regimen.
 - Avoid use of rectal tubes.
 - Advocate for stress ulcer prophylaxis.
 - Provide dentures as soon as possible.
 - Implement aspiration precautions.
 - Keep the head of the bed elevated to a high Fowler's position, frequently suction copious oral secretions, bedside evaluate swallowing ability by a speech

therapist, assess phonation and gag reflex, monitor for tachypnea.

- Advocate for early enteral/parental nutrition if consistent with advance directive.
- Ensure tight glucose control.
- Genitourinary (GU)
 - Assess any GU tubes to ensure patency and adequate urinary output. If an older adult should experience an acute decrease in urinary output, consider using bladder scanner (if available) rather than automatic straight catheterization to check for distension.
 - Advocate for early removal of Foley catheters. Use other less invasive devices/methods to facilitate urine collection (i.e., external or condom catheters, offering the bedpan on a scheduled basis, and keeping the nurse's call bell/signal within the older adult's reach).
 - Monitor blood levels of nephrotoxic medications as ordered.
- Immune/Hematopoietic
 - Ensure the older adult is ordered appropriate deep vein thrombosis (DVT) prophylaxis (i.e., heparin, sequential compression devices).
 - Monitor laboratory results, assess for signs of anemia relative to patient's baseline.
 - Recognize early signs of infection: restlessness, agitation, delirium, hypotension, tachycardia, because older adults are less likely to develop fever as a first response to infection.
 - Meticulously maintain infection control/prevention protocols.
- Skin
 - Conduct thorough skin assessment.
 - Vigilantly monitor room temperature, make every effort to prevent heat loss, and carefully use and monitor rewarming devices.
 - Use methods known to reduce the friction and shear that often occurs with repositioning in bed.
 - In severely compromised patients, the use of specialty beds may be appropriate.
 - Techniques such as frequent turning, pressure-relieving devices, early nutritional support, as well as frequent ambulation may not only protect an older adult's skin but also promote the health of their cardiovascular, respiratory, and gastrointestinal systems.
 - Closely monitor intravenous (IV) sites, frequently check for infiltrations and use of nonrestrictive dressings and paper tape.

Definitions:

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/Consensus panels

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CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Patient

- Restoration of hemodynamic stability
- Avoidance/minimization of complications
- Maintenance/optimization of preadmission functional ability
- Minimization of pain/anxiety
- Improved communication by the health care team

Provider

- Employment of consistent and accurate documentation of assessment relevant to older intensive care unit (ICU) patients
- Provision of consistent, accurate, and timely care in response to deviations identified through ongoing monitoring and assessment of older ICU patients
- Provision of patient/caregiver with information and teaching related to their illness and regarding transfer of care and/or discharge

Institution

- Evaluation of staff competence in the assessment of older critically ill patients
- Utilization of unit-specific, hospital-specific, and national standards of care to evaluate existing practice
- Identification of areas for improvement and work collaboratively across disciplines to develop strategies for improving critical care to older adults

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2008

GUIDELINE DEVELOPER(S)

Hartford Institute for Geriatric Nursing - Academic Institution

SOURCE(S) OF FUNDING

Hartford Institute for Geriatric Nursing

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Michele C. Balas, Colleen M. Casey, Mary Beth Happ

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from [Hartford Institute of Geriatric Nursing Web site](#).

Copies of the book *Geriatric Nursing Protocols for Best Practice*, 3rd edition: Available from Springer Publishing Company, 536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: www.springerpub.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on June 16, 2008. The information was verified by the guideline developer on August 4, 2008.

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